Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

- **Product name:** Manganese Dioxide for VOCs Catalytic Combustion
- **Brand:** BTLnewmaterial
- **CAS-No.:** 1313-13-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

- **Identified uses:** Catalyst for low-temperature oxidation of volatile organic compounds (VOCs) in industrial exhaust treatment systems.

1.3 Details of the supplier of the safety data sheet

- **Company:** BTLnewmaterial
- **Address:** Room 706, No. 154, Wuyi East Road, Niezhou Residential Committee, Caizichi Sub-district Office, Leiyang City, Hengyang City, Hunan Province, China
- **Email:** lixifirm@outlook.com
- **Phone/WhatsApp:** +8618273793022
- **Website:** manganesesupply.com

1.4 Emergency telephone number

- **Emergency Phone #:** +8618273793022 (Please refer to local emergency services for immediate assistance)

SECTION 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

- **GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**
  - Acute toxicity, Oral (Category 4), H302
  - Acute toxicity, Inhalation (Category 4), H332

2.2 GHS Label elements, including precautionary statements

- **Pictogram:**
  - `!` (Exclamation Mark)
- **Signal word:** Warning
- **Hazard statement(s):**
  - H302 + H332: Harmful if swallowed or if inhaled
- **Precautionary statement(s):**
  - P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
  - P264: Wash skin thoroughly after handling.
  - P270: Do not eat, drink or smoke when using this product.
  - P271: Use only outdoors or in a well-ventilated area.
  - P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
  - P304 + P340 + P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
  - P501: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS: None

SECTION 3: Composition/Information on Ingredients

3.1 Substances

- **Synonyms:** Manganese dioxide
- **Formula:** MnO_2
- **Molecular weight:** 86.94 g/mol
- **CAS-No.:** 1313-13-9

- **EC-No.:** 215-202-6
- **Index-No.:** 025-001-00-3

Hazardous components:

Component	Classification	Concentration
Manganese dioxide	Acute Tox. 4; H302 + H332	85% – 95%

SECTION 4: First-Aid Measures

4.1 Description of first aid measures

- **General advice:** Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.
- **If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.
- **In case of eye contact:** Flush eyes with water as a precaution.
- **If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

- The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

- No data available

SECTION 5: Fire-Fighting Measures

5.1 Extinguishing media

- **Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

- Manganese/manganese oxides

5.3 Advice for firefighters

- Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

- No data available

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

- Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

- Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

- Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- For disposal see section 13.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

- Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

- Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

- Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

- **Components with workplace control parameters:**
  - Manganese dioxide (CAS: 1313-13-9):
    - OSHA PEL: Ceiling 5 mg/m^3
    - ACGIH TLV: TWA 0.02 mg/m^3 (respirable), 0.1 mg/m^3 (inhalable)
    - NIOSH REL: TWA 1 mg/m^3, STEL 3 mg/m^3

8.2 Exposure controls

- **Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- **Personal protective equipment:**
  - **Eye/face protection:** Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
  - **Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

    - **Body Protection:** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
    - **Respiratory protection:** For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
- **Control of environmental exposure:** Do not let product enter drains.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

- **Appearance:** Form: solid (Powder / Granule / Extrudate)
- **Odour:** No data available
- **Odour Threshold:** No data available
- **pH:** No data available
- **Melting point/freezing point:** 535 °C (995 °F) - dec.
- **Initial boiling point and boiling range:** No data available
- **Flash point:** No data available
- **Evaporation rate:** No data available
- **Flammability (solid, gas):** No data available
- **Upper/lower flammability or explosive limits:** No data available
- **Vapour pressure:** No data available
- **Vapour density:** No data available
- **Relative density:** 5.026 g/cm^3
- **Bulk Density:** 0.4 – 0.8 g/cm^3
- **Water solubility:** No data available
- **Partition coefficient: n-octanol/water:** No data available
- **Auto-ignition temperature:** No data available

- **Decomposition temperature:** No data available
- **Viscosity:** No data available
- **Explosive properties:** No data available
- **Oxidizing properties:** No data available

9.2 Other safety information

- **Surface Area (BET):** 80 – 250 m^2/g

SECTION 10: Stability and Reactivity

10.1 Reactivity

- No data available

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No data available

10.4 Conditions to avoid

- No data available

10.5 Incompatible materials

- Strong acids, Strong reducing agents, Organic materials

10.6 Hazardous decomposition products

- Hazardous decomposition products formed under fire conditions. - Manganese/manganese oxides
- Other decomposition products - No data available
- In the event of fire: see section 5

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

- **Acute toxicity:** LD50 Oral - Rat - > 3,478 mg/kg
- **Skin corrosion/irritation:** No data available
- **Serious eye damage/eye irritation:** No data available
- **Respiratory or skin sensitisation:** No data available
- **Germ cell mutagenicity:** No data available
- **Carcinogenicity:**
  - IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
  - NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
  - OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
- **Reproductive toxicity:** No data available
- **Specific target organ toxicity - single exposure:** No data available
- **Specific target organ toxicity - repeated exposure:** May cause damage to organs (Brain) through prolonged or repeated exposure if inhaled.
- **Aspiration hazard:** No data available
- **Additional Information:** RTECS: OP0350000. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

SECTION 12: Ecological Information

12.1 Toxicity

- No data available

12.2 Persistence and degradability

- The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

- No data available

12.4 Mobility in soil

- No data available

12.5 Results of PBT and vPvB assessment

- PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

- No data available

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

- **Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- **Contaminated packaging:** Dispose of as unused product.

SECTION 14: Transport Information

- **DOT (US):** Not dangerous goods
- **IMDG:** Not dangerous goods
- **IATA:** Not dangerous goods

SECTION 15: Regulatory Information

- **SARA 302 Components:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- **SARA 313 Components:** The following components are subject to reporting levels established by SARA Title III, Section 313:
  - Manganese dioxide (CAS-No. 1313-13-9)
- **SARA $^{311}/_{312}$ Hazards:** Acute Health Hazard, Chronic Health Hazard
- **Massachusetts Right To Know Components:** No components are subject to the Massachusetts Right to Know Act.
- **Pennsylvania Right To Know Components:** Manganese dioxide (CAS-No. 1313-13-9)
- **New Jersey Right To Know Components:** Manganese dioxide (CAS-No. 1313-13-9)
- **California Prop. 65 Components:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3.

- **Acute Tox.:** Acute toxicity
- **H302:** Harmful if swallowed.
- **H332:** Harmful if inhaled.
- **H302 + H332:** Harmful if swallowed or if inhaled

HMIS Rating

- **Health hazard:** 2
- **Chronic Health Hazard:** *
- **Flammability:** 0
- **Physical Hazard:** 0

NFPA Rating

- **Health hazard:** 2
- **Fire Hazard:** 0
- **Reactivity Hazard:** 0

Further information The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BTLnewmaterial and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.